

AMENDMENTS TO THE CLAIMS

Claims 1-11 (Canceled)

12. (Withdrawn) A method for forming a CE having a sensor that follows a contour of a shell associated with the CE; comprising:

bulk removing substrate material from the back side of a substrate of the CE; and

precision removing substrate material from the back side of the substrate until the substrate has a desired thickness that enables the sensor formed on the substrate to be flexed and shaped into a curved configuration to match the contour of shell.

13. (Withdrawn) The method as in Claim 12, wherein the precision removing step includes reducing stresses in the back side of the substrate.

14. (Withdrawn) The method of Claim 12, further comprising coupling the substrate to a support.

15. (Withdrawn) The method of Claim 14, wherein the support is selected from a flexible support and a rigid support.

16. (Withdrawn) The method of Claim 14, wherein the coupling of the substrate to the support further comprises providing sufficient flexibility such that the combination of the substrate and the support can be shaped into a curved configuration that substantially matches the contour of the shell of the CE.

17. (Withdrawn) The method of Claim 16, further comprising encapsulating electrical connections between the substrate and the support with a protective coating.

18. (Withdrawn) The method of Claim 16, further comprising mounting the coupled substrate and support inside a protective housing having an optically transmissive window that enables light to impinge on the sensor of the substrate.

Claims 19-25 (Canceled)

26. (New) An apparatus, comprising:

a capsule endoscope having a shape, wherein the shape has a contour, at least a portion of the contour is curved, and wherein the capsule endoscope includes:

a shell, wherein the shell includes one or more sensors, and wherein at least one of the one or more sensors is curved to shape to the contour.

27. (New) The apparatus of Claim 26, wherein the capsule endoscope further includes an outer shell that covers at least a portion of the shell.

28. (New) The apparatus of Claim 26, wherein a sensor of the one or more sensors is at least one of: a temperature sensor, a pH sensor, an infrared sensor, an imaging sensor, or an active sensor.

29. (New) The apparatus of Claim 26, wherein the capsule endoscope further includes a lens covering at least one of the one or more sensors.

30. (New) The apparatus of Claim 26, wherein the one or more sensors are made of an organic semiconductor.

31. (New) The apparatus of Claim 26, wherein the capsule endoscope further includes a covering that is applied over at least a portion of the shell.

32. (New) The apparatus of Claim 26, wherein the capsule endoscope further includes a substrate that includes the one or more sensors, wherein the substrate is formed sufficiently thin that it can be shaped to the contour.
33. (New) The apparatus of Claim 32, wherein the substrate includes a silicon material.
34. (New) The apparatus of Claim 32, wherein the substrate has a thickness of about 25 microns to about 125 microns.
35. (New) The apparatus of Claim 32, wherein the capsule endoscope further includes:
a support having sufficient flexibility such that the support can be formed to the contour, wherein the substrate is coupled with the support such that the combination can be formed to the contour.
36. (New) The apparatus of Claim 35, wherein the support has electrical contact pads formed thereon; wherein the one or more sensors of the substrate have electrical contacts; wherein the electrical contacts of the substrate are electrically connected to the electrical contact pads of the support; and wherein electrical connections between the electrical contact pads of the support and the electrical contacts of the optical circuitry of the substrate are encapsulated with a protective covering.
37. (New) The apparatus of Claim 35, wherein the support is formed of a laminate of polyimide and copper layers; and wherein the substrate is comprised of a silicon substrate.
38. (New) The apparatus of Claim 35, wherein the capsule endoscope further includes a protective housing, and wherein the support and substrate are arranged inside of the protective housing

39. (New) The apparatus of Claim 38, wherein the protective housing includes a portion of an optically transmissive surface.

40. (New) An apparatus, comprising:
a capsule endoscope, including:

one or more sensors forming at least a portion of a shell of the capsule endoscope, wherein the shell has a contour, and wherein at least one of the one or more sensors is curved based on the contour of the shell; and
an illuminator positioned on the shell.

41. (New) The apparatus of Claim 40, wherein the capsule endoscope further includes an outer shell that covers at least a portion of the shell.

42. (New) The apparatus of Claim 40, wherein a sensor of the one or more sensors is at least one of: a temperature sensor; a pH sensor, an infrared sensor, an imaging sensor, or an active sensor.

43. (New) The apparatus of Claim 40, wherein the capsule endoscope further includes a substrate that includes the one or more sensors, wherein the substrate includes a semiconductor material, and wherein the substrate has a thickness of about 25 microns to about 125 microns.

44. (New) A method for forming a CE having a sensor that follows a contour of a shell associated with the CE; comprising:

bulk removing substrate material from the back side of a substrate of the CE; and
precision removing substrate material from the back side of the substrate until the substrate has a desired thickness that enables the sensor formed on the substrate to be flexed and shaped into a curved configuration to match the contour of shell, wherein the method is performed such that the method creates the apparatus of Claim 26.